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## Nurses' Performance of Breast Self-Examination

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NURSES PERFORMANCE  
OF BREAST SELF-EXAMINATION

By

Anne M. Bauer

A THESIS

Submitted to  
Grand Valley State University  
in partial fulfillment of the requirements for the  
degree of

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## ABSTRACT

### NURSES PERFORMANCE OF BREAST SELF-EXAMINATION

By

Anne M. Bauer

A descriptive, correlational design was used to examine the relationship between the Health Belief Model (HBM) variables and breast self-examination (BSE) in a registered nurse population. Champion's HBM Scale (1987) was mailed to a random sample of RN's in one midwestern county (N = 107). Construct validity for the instrument was established by Champion and alpha reliability rating for subscales ranged from .73 - .96 in this study. The primarily Caucasian, ADN and diploma educated sample varied in age from 20 to over 60 years (median age = 41-50).

Less than half (48%) of the subjects reported monthly BSE. A stepwise multiple regression analysis was performed on the HBM variables of susceptibility, seriousness, benefits, barriers, health motivation, and control. A significant portion of the variance in BSE (19%) was explained by motivation and barriers. Other variables did not enter the equation. Older nurses (51 years and older) were more motivated to perform BSE ( $t = 3.2, p = .002$ ).

Additionally, nurses who had friends or family members with cancer felt they were more susceptible to getting cancer but did not significantly increase their performance of BSE. This research supports previous findings which identifies the barriers variable as consistently significant. Health motivation was also significant and has implications for the education and implementation of BSE.

## DEDICATION

This research is dedicated to all of the women who have endured the disease of breast cancer. They are an inspiration to all women to be active participants in their own health. Also to my wonderful family, John, Jay, Paul, Krisiti, Otton, and my mother, June, who have always supported my efforts with enthusiasm. Their love, caring, and prayers have allowed me to fulfill a dream.

## ACKNOWLEDGMENTS

This research has been completed as a result of the encouragement and guidance of many individuals. I am very grateful to Patricia W. Underwood, Ph.D., R.N., for serving as the chairperson of this committee. Her knowledge and expertise have guided this project. Her nurturing and attention to detail, as well as her demand for professionalism, serves as an inspiration for many nurses and will fondly be remembered. In addition, I would like to thank my committee members, Dr. Katherine Kim, Ph.D., R.N., and Dr. Carolyn Shapiro, Ph.D., for their intriguing comments and concerned guidance in this research effort. I appreciate all of their efforts, their expertise, and dedication to this project.

I would also like to thank Louette Loutjens, Ph.D., R.N., for encouraging me to begin graduate school and for serving as my advisor throughout. I shall always remember her enthusiasm and gift for motivating individuals to achieve more than they think possible.

I would like to also mention Cindy Koviak, Ph.C., R.N., for her dedication in helping me complete my data analysis. Cindy assisted me in more clearly understanding the results of my work and possible implications for practice.

Finally, I would like to thank my classmates who supported me with concern, encouragement, and honest feedback. They continuously taught me to laugh at life and never give up. I have enjoyed the comradeship we have shared.

.

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## CHAPTER ONE

### INTRODUCTION

Breast cancer is the leading cause of death among American women, and the medical community has been waging an uphill struggle to educate women in terms of what they can do to keep themselves from becoming victims of this disease. Nurses, as health educators, teach people in all aspects of health promotion and prevention. One common behavior nurses teach is the practice of breast self-examination (BSE). Breast self-examination is a recommended supplement to mammography and clinical breast examination for enhancing early detection of breast cancers. Nurses are in an advantageous position to be teaching BSE to their patients, either in the hospital or in the community (Clarke & Sandler, 1989). Nurses are knowledgeable both about breast cancer and about BSE. Additionally, the public perceives nurses as having expertise in health and illness related matters. These factors have the potential to place nurses in a prominent position to influence women about BSE and decrease the incidence of advanced breast cancer.

The breast is the most common site for carcinoma in women, and breast cancer is the most common cause of death in women aged 39-44 years. Approximately 20 years of clinical research data on the natural history and treatment of breast cancer demonstrate that it is not one disease but a protean group of neoplasms (Goodman, 1991); hence, breast cancer is complex, mystifying, and deadly. Successful treatment continues to depend largely on detection. There is a significantly more optimistic prognosis for patients

diagnosed and treated in the early stages of breast cancer than for those diagnosed in the later stages. Therefore, it is crucial that nurses become actively involved in communities around the United States to promote BSE as one of the components of early breast cancer detection.

Considering nurses' pre-eminence in health care and their responsibilities in teaching BSE, it is important to ascertain the compliance among nurses themselves in performing this health behavior. Since BSE is an effective means to detect early cancer development, women should perform this technique to maintain a healthy state. Nurses are predominantly women, and the need to perform BSE extends to them both as women and as nurses who should be educating others in health maintenance. Is the public perception that nurses are more conscious of their own health habits a valid one? The current study will explore this issue.

Monthly BSE is recommended by the National Cancer Institute and the American Cancer Society as an important behavior for discovering breast cancer at an early and treatable stage. BSE is a health practice performed by women to identify growth of abnormal breast tissue. This practice is "free, noninvasive, convenient, private, safe, requires no specific equipment, is not time consuming, and, except for physician examination, is the method longest advocated as having potential in (early) detection of breast cancer" (Cretain, 1989). Factors involved in the performance of monthly BSE vary, yet the problem of failing to conduct monthly breast self-examination is of paramount importance to all women's health. Nurses, as a population, need to be keenly aware of the practice of BSE among themselves in order to be role models and

advocates for this activity in the general population.

The Health Belief Model (HBM) will be used as the theoretical framework for this study (Rosenstock, Strecher, & Becker, 1988). This model attempts to explain why certain individuals participate in healthy activities and has been used extensively in the analysis of BSE. The theoretical premises of this model are of particular importance in evaluation of the performance of BSE. If a determination can be made as to the reasons for non-performance of a health habit, such as BSE, then steps can be taken at various levels to minimize or eliminate that criteria and improve performance. One area where there has been strong evidence of an association between health beliefs and participation in preventive programs is in the early detection of cancer (Calnan, 1984). This knowledge can assist nurses in establishing preventive programs with optimal participation by their peers in particular and women in general. This study will build on previous studies by Champion (1987, 1988, 1991, 1993), and Trotta (1980).

Champion (1987) examined the relationship between health belief model variables and BSE in 588 women. Analysis of the data showed that barriers, knowledge, and susceptibility were correlated with frequency of breast self-examination. Additionally, persons taught by a doctor or a nurse evidenced greater frequency of breast self-examination than those taught in other ways.

Champion (1988) also conducted a correlational study to identify attitudinal variables specified by the Health Belief Model that were related to intent, frequency, and proficiency of breast self-examination among 380 women age 35 years and older. Results supported the combined traits of susceptibility,

seriousness, barriers, health motivation, and control to predict intent to practice BSE. In addition, frequency and total proficiency of BSE was predicted by health motivation, susceptibility, and barriers. This result lends support to the use of the HBM variables in predicting women's intention and actual behavior to perform breast self-examination.

In 1990, 363 women from the sample population utilized in Champion's 1988 study, were contacted by telephone to complete a second interview. Again a correlational study was conducted to identify attitudinal variables specified by the HBM. Results supported the ability of past performance, perceived barriers, and knowledge to predict current total performance. Also, frequency for BSE was predicted by past frequency, barriers, health motivation, control, being taught by a doctor, confidence, having BSE procedures checked, benefits and susceptibility.

Further, a mailed questionnaire was utilized by Champion in 1991 to collect information from 322 women age 35 and older. The purpose of this study was to identify the relationship between selected variables and the practice of breast self-examination, mammography, and professional breast examination. Results again supported a relationship between BSE and attitudinal variables of health motivation, social influence, susceptibility, barriers, confidence, and knowledge. The most recent study by Champion and Scott (1993) tested the effect of a theoretically based nurse-delivered intervention on BSE behavior in four groups. In this study, 301 women were selected from a target population. One year after intervention, significant differences were found in self-reported proficiency, observer-rated proficiency,

and sensitivity (lump detection) between procedural and control groups. The procedural intervention consisted of a standardized BSE teaching protocol, Special Touch, utilized by the American Cancer Society that involved return demonstration and feedback. Observed proficiency and a measure of sensitivity were added to the measurements of outcome variables. The control group had a interview in which all HBM variables were assessed but no intervention was delivered. Also in this study, observer-rated proficiency and sensitivity for the Procedural/Belief group was increased along with nodule detection as compared with the Belief group.

Trotta (1980) conducted a study to investigate how thoroughly and frequently women practice BSE. The HBM was useful as a theoretical framework for a mailed questionnaire in a sample population of 446 women. Findings suggested that, in order to be most effective, instruction in BSE should be by personal interaction and include the use of individualized strategies to overcome barriers to regular practice.

### Purpose

The purpose of this study is to examine the relationship between the health belief model (HBM) variables and breast self-examination (BSE) in a selected nursing population in the midwest United States.

## CHAPTER TWO

### THEORETICAL FRAMEWORK AND LITERATURE REVIEW

#### Theoretical Framework

The Health Belief Model (HBM) was selected as the theoretical framework for this research study and has particular application to the practice of breast self-examination (BSE). The HBM is one of the most elaborate and well-researched models used to explain health behaviors. BSE is a health behavior because its practice potentiates the early detection of breast cancer. The HBM served as a model for this research because of its utilization in previous research and applicability to nurses in the performance of BSE.

The HBM was originally formulated to explain the public's unwillingness to accept disease preventives or screening tests offered by the U.S. Public Health Service for early detection of asymptomatic disease (Wyper, 1990). The model describes how individuals are influenced to initiate preventive health behavior. It has been researched extensively and has undergone a number of evolutionary changes since its introduction in the 1950's. In the HBM, modifying factors reflect the assumption that diverse demographic, personal, and structural variables affect a person's motivation and general perception of a specific disease process. This research utilizes the HBM to explain how a variety of modifying factors combine with the identified variables in the HBM to produce the performance of a health activity, BSE.

The basic concepts of the HBM include susceptibility, seriousness, benefits and barriers. Susceptibility is defined as a person's perceived susceptibility or vulnerability to an illness or a given diagnosis. The perceived

seriousness of a disease involves assessing the consequences of incurring a health-related problem. Perceived benefits of preventive behavior are seen as important and affect performance of a health activity, if a client assesses the health activity as both feasible and efficacious. The perceived barriers to performing preventive behavior when subtracted from benefits are often a determinant of whether or not change occurs in the performance of the health activity.

In a later development of the HBM, two specific variables of general health motivation and perceived control were added. Motivation was added by Becker, Drachman, and Kirscht (1974) and control was added by Hershey, Morton, Davis, and Reichgott (1980) along with the original four variables of perceived susceptibility, perceived seriousness, perceived benefits, and perceived barriers. These six variables were included in the research tool for this study. The model used for this study is an adaptation of the Health Belief Model. In this model, the modifying factors are the demographic and structural variables which include age, sex, religion, income, years in nursing, area of nursing practice and active or inactive status, friend or family member with cancer, and method by which BSE was taught. These modifying factors affect all of the six HBM variables and combine in various ways to affect the performance of BSE (Figure 1).

The Health Belief Model currently has two additional variables which were not included in the original model or in this research but which have the potential for helping explain BSE. They are self-efficacy, or confidence, and knowledge (Lauver, 1989). Self-efficacy was addressed as a central concept in



## Health Belief Model Variables

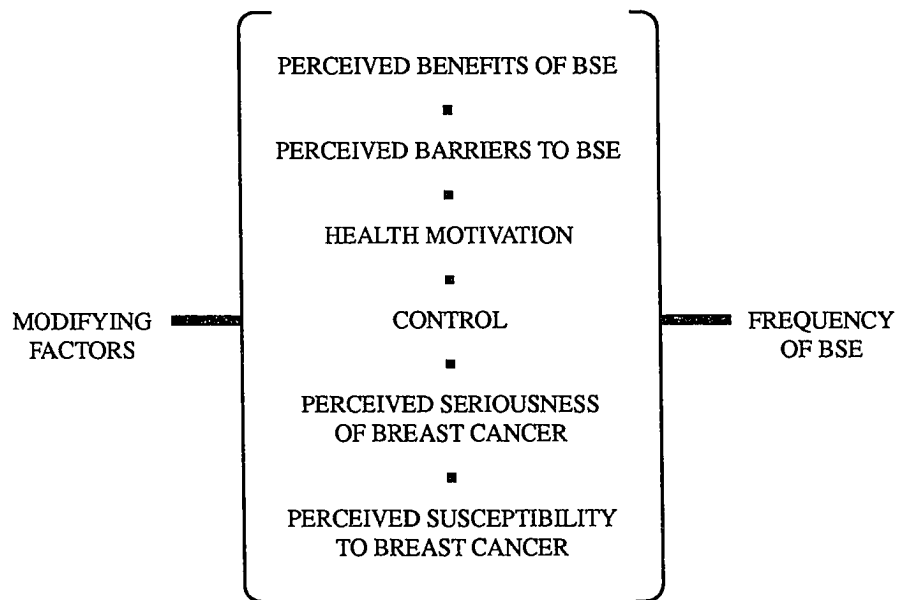


Figure 1. Adapted Health Belief Model

Bandura's Social Learning Theory (1982). According to Bandura, persons who have high expectations about their ability to engage in or execute a behavior will have higher behavioral outcomes than those who have less confidence (Champion, 1990). There is a general sense that confidence correlates directly with increased proficiency of a behavior. Knowledge is generally considered an extraneous variable of the HBM and influences attitude which indirectly influences behavior.

Since the late 1970's, variables included in the HBM have been tested in relation to the health behavior of breast self-examination (BSE). According to the model, health behaviors are more likely to occur if an individual feels susceptible to a specific condition (breast cancer) and feels the condition is serious. The practice of BSE is likely to increase when the individual believes she is susceptible to breast cancer and when breast cancer poses a serious threat (Champion, 1988). In addition, the individual must perceive benefits to a specific action (BSE) while perceiving few barriers. Finally, being concerned about health and feeling a sense of control over health outcomes is related to a specific behavior (BSE) (Champion, 1987). This information can be utilized when planning prevention programs to maintain the health of America's women. The theoretical premises of this model are of particular importance in the evaluation of the performance of BSE because of the alarming increases in diagnosis of breast cancer and the relationship of monthly BSE to early breast cancer detection.

The HBM has had some historical importance in explaining behavior but has also been cited for the following weaknesses: 1) the HBM, with the most

recent reformulation of variables such as demography, readiness, and enabling, has become " a catalog of variables more than a model"; 2) the research shows a lack of consistent operationalization of the variables; and, 3) the model fails to specify relationships among the variables (Damrosch, 1991). Other limitations of the HBM as a psychosocial model may be that the HBM tends to neglect such factors as the habitual aspects of some behaviors (e.g. cigarette smoking), nonhealth reasons for health-related behaviors (e.g. requirements for employment), and the importance of economic and environmental factors as barriers.

Utilizing the HBM as a framework for research has created some additional limitations in designing tools appropriate to measure the key concepts of the model. The HBM variables have been entered into multiple regression analysis as though each influenced BSE independently. However, analysis of the HBM suggests that the original four variables can be combined to form two constructs: perceived threat and benefits weighed against barriers. There is also the additional complication that intent does not accurately measure performance of a health activity (BSE). Tools to measure the HBM have been varied in terms of what they are measuring and how this reflects on health activities of individuals.

### Literature Review

Numerous studies indicate that the HBM can predict intention to practice health related behaviors. For example, a common finding has been that clients who fail to follow professional recommendations tend to see themselves as less threatened by and less susceptible to their illness than those who comply with

such recommendations (Damrosch, 1991). Thus, the evidence indicates that health beliefs are important in determining whether individuals will adopt a given behavior.

Most research studies of the HBM and BSE have found at least one of the HBM concepts to be a significant variable, although inconsistencies are evident. Perceived susceptibility was found by investigators to be significantly associated with BSE (Calnan & Rutter, 1986), while another investigator found no correlation between susceptibility or seriousness and frequency of BSE (Champion, 1987). Benefits have been related to BSE, but the greatest amount of variance in BSE behavior has been explained by the barriers construct (Champion, 1987). The two newest concepts, perceived control and health motivation, have been less thoroughly tested than the original variables (Champion, 1990).

Rutledge and Davis (1988) described a study which examined BSE compliance in women as it related to the HBM. A self-report questionnaire was given to 248 women in industrial, college, and YWCA settings. It assessed BSE learning experience, beliefs, and knowledge of BSE. Seven of the 28 variables in a regression model accounted for 58% of the variance in BSE compliance: having a reminder method, encouragement of family and friends, confidence in ability to do BSE, age (lower), physician interest in BSE compliance, disagreement that BSE causes worry, and concern regarding breast cancer.

Trotta (1980), in a survey of 446 female employees of an insurance company in Connecticut, age 18 to 64 years, investigated predictors of BSE performance. Frequency and thoroughness of BSE practice were

operationalized using an investigator-designed questionnaire. With multiple regression analysis, perceived barriers were found to be the single best predictor of BSE practice, with high barrier scores being predictive of low reported BSE frequency and thoroughness. Another significant predictor of thoroughness of practice was knowledge of BSE and perceived benefits of engaging in BSE. Additional predictors of thoroughness of practice included receiving printed information, person-to-person instruction, and instruction within a group. Trotta concluded that receiving personal instruction and identifying and overcoming barriers are important aspects of successful BSE performance.

Schleuter (1982) discussed a descriptive, comparative study of 263 athletic and nonathletic women and their performance of BSE. These women were contacted through sorority alumnae and YMCA groups in a Midwestern metropolitan community. The sample group was divided into athletic and nonathletic women based on self-reported levels of physical exercise. There was an assumption that athletic women are more actively involved in their general health and may participate more in all health activities including BSE. Interestingly, the author found no significant difference in the frequency of BSE practice among exercisers and nonexercisers and no relationship between knowledge of breast cancer or health beliefs and the frequency of BSE practice.

Champion (1990) described a correlational study of 362 women ages 35 and over. This study attempted to identify the relationship between attitudinal variables specified by the HBM and frequency and total performance of BSE. Results supported the ability of past performance, perceived barriers, and

knowledge to predict current total performance (combined frequency and proficiency). In addition, frequency of BSE was predicted by past frequency, barriers, health motivation, control, being taught by a doctor, confidence by having the performance of the BSE procedure checked, benefits and susceptibility. The instrument to measure these variables was based on previous work by Champion (1987). The scales had been previously tested for content and construct validity as well as for internal consistency and test-retest reliability

Wyper (1990) studied 202 adult women to examine the relationships of variables derived from the HBM to the performance of BSE. A self-administered questionnaire was given to women 18 years and older from a variety of community settings. A modified version of Champion's tool (1987) was used to measure perceived susceptibility, perceived seriousness, perceived benefits, and perceived barriers. The correlations between all HBM variables and the frequency of BSE were very similar to findings reported by Champion (1984, 1987) and Rutledge (1987). Multiple regression of the HBM variables in their original form on all three measures of BSE (frequency, thoroughness, and practice) revealed that only susceptibility and barriers contributed to the model. Stepwise multiple regression indicated that regardless of the measure of BSE, barriers accounted for most of the explained variance. Although HBM variables explained a significant proportion of the variance in BSE performance, only two of the four variables, susceptibility and barriers, contributed to this explanation. As in many previously reported studies, barriers was the most powerful dimension of the model in both univariate and multivariate analyses.

Gonzales (1990) conducted a descriptive study of 106 low-income Mexican American women to examine the role of self-efficacy, or perceived capacity to perform a given activity, as it related to the frequency of BSE. This study employed two forms of analysis: correlations among the variables and the use of one way Analysis of Variance by subgroups based on English language proficiency and self-efficacy. The data was gathered using semistructured interviews where interviewers recorded responses with both open-ended and Likert-type questions. Bivariate correlations between frequency of BSE, self-efficacy, barriers to health care, language proficiency, and social support showed a strong relationship between self-efficacy and the outcome frequency of BSE. There was a positive relationship between English language proficiency and barriers to care, as well as between the language proficiency and reported self-efficacy. The results point to the centrality of self-efficacy as a variable affecting the frequency of BSE with English language proficiency having no direct effect.

In 1986, Calnan and Rutter reported on a study conducted as part of a national campaign to evaluate the benefits of BSE in early detection of breast cancer. The purpose of the analysis was to test the predictions in the HBM which relate preventive health behavior to perceived severity, perceived susceptibility, perceived benefits and barriers. Three groups of women were investigated. The first group included 278 women who lived in a designated BSE district, agreed to attend a BSE class, and were taught the BSE techniques in detail. The second group of 262 women from the same BSE district declined an invitation to attend the BSE class, but agreed to remain part of the study. A

control group of 594 women lived outside the study district and were offered no classes. The individual beliefs and self-reported behaviors were measured shortly before classes were conducted and again a year later. The two groups of attenders and non-attenders lived in a designated BSE district which was simultaneously subjected to a media campaign related to BSE and the BSE class. The control group lived in a district which was not involved in either the media campaign or personal classes. The media campaign actually produced changes in beliefs and behavior but relationships between the two study groups, using a stepwise multiple regression, was much weaker than expected and accounted for no more than 25% of the variance. A second piece of evidence was that a supplemental analysis of the data in this study showed that prior behavior was a stronger predictor of subsequent behavior than were beliefs and should be incorporated into models which attempt to explain health behavior.

Lauver (1989) compared the effects of four interventions on frequency and thoroughness of BSE. These interventions were: a) basic information on the steps of BSE; b) tactile sensory information in addition to basic steps of BSE; c) coping techniques instruction in addition to basic steps of BSE, and; d) tactile sensory information and coping techniques in addition to basic steps of BSE. Women (N = 204) seeking BSE instruction were randomly assigned to interventions which provided different types of information, from a self-regulation framework to promote BSE practice. Results indicated that for those who performed BSE, there was no relationship between frequency and thoroughness of the exam. A repeated measures ANOVA showed BSE



frequency increased from pre-interventions to three months post-interventions and stabilized for six months. Also, among prior performers, those receiving sensory information tended to have higher thoroughness scores than those who did not.

Coleman and Pennypacker (1991) described a two-stage study to develop and validate a scoring system to measure BSE proficiency. They utilized a paired comparisons procedure and developed a survey instrument which evaluated the following eight components of BSE: area, pressure type, motion, part used, pattern, number of fingers, number of motions, and duration. This study consisted of a pretest, posttest immediately after instruction, and second posttest three months later to include each of 79 women performing BSE techniques on themselves and a breast model. There is general agreement, according to the authors, that studies on BSE should include measurements of BSE proficiency rather than self-reports of BSE frequency or confidence in BSE practice. The calculations for the raw scores included the eight components of area, duration, motion, part, pattern, number of fingers, number of motions, and pressure type. The mean performance scores of each group on first and second posttest showed an improvement after teaching as compared to before teaching scores. This system can be one method to objectively score BSE proficiency and can be useful to researchers using relative performance as a measure of BSE studies.

Turning to the specific issue of nurses' performance of BSE, one of the earliest studies was Cole and Gorman (1984) who reported a hospital-based study of 93 female registered nurses from a variety of specialty areas. The

nurses were surveyed by questionnaire about their practice of BSE. Their knowledge, attitudes, and experience with breast cancer were also examined. The data revealed two distinct groups of women (compliers and non-compliers) based on the use of correct monthly BSE technique. This data was analyzed using descriptive and inferential statistics. Of the total sample, 30.1% were found to be compliers. Non-compliers comprised 69.9%. The complier group was younger ( under 35 ), more likely to have a B.S.N. or M.S.N., and more likely to do BSE. One possible reason for this might be due to more recent education that stresses BSE. The non-complier group was older, more likely to have had an ADN or diploma in nursing education, and had more bedside experience with breast cancer patients.

There was no significant difference found between the groups in knowledge level about breast cancer; therefore, it was not an important factor in predicting BSE compliance in this sample. The recommendations and conclusions from this study indicate that more emphasis needs to be placed on teaching nurses self-care practices for maintaining good health. Areas for further study could be the examination of nurses' own BSE practice related to their tendency to teach BSE to their patients, and an examination of women's attitudes toward looking at and touching their bodies. RNs should not be treated any differently than the general public in terms of their own health regardless of the tendency to assume that nurses are more knowledgeable about health practices and follow them regularly. Female nurses are women dealing with the same emotional issues tied to the breast as other women and so education related to BSE must be multidimensional and address the fear,

anxiety, femininity, and self-esteem issues related to behavior.

Clarke and Sandler (1989) looked at the various factors involved in nurses' teaching of BSE. The purpose of the study was to examine how frequently BSE was taught by the nursing staff in a large, tertiary-care hospital. The 40 question tool consisted of three sections. One section identified demographic information. A second section asked the nurses' current practice of teaching BSE, and a third section included questions related to the nurses' own health and personal practice of BSE. Of the total nurse respondents, 82% indicated they practiced BSE: 41% practiced monthly, and 30 % practiced at least every three months. None of the total group expressed lack of confidence in technique and 92% were confident they could detect abnormalities. No relationship was revealed between the risk of breast cancer and the practice of BSE. Additionally, the contention that nurses do not routinely teach BSE to their female patients was supported by this study, which indicated that 60% of the nurses infrequently or never taught BSE. The high rate of BSE compliance identified in this study group of whom 90% were under the age of 40, in conjunction with low-to-medium risk of breast cancer for that age group, was consistent with findings that show women at lower risk for breast cancer more likely to perform BSE than women at higher risk.

Nelson (1991) conducted a study of 108 women to determine the differences in perceived health, self-esteem, health habits, and perceived benefits and barriers to exercise in women who have and who have not experienced stage I breast cancer. A combination of four different scales comprised the questionnaire sent to 54 women diagnosed with breast cancer

and 54 women without breast cancer in a Washington community.

Approximately one half the women who experienced breast cancer reported that the experience had not changed their perceived health, self-esteem, nor health habits. Viewing this finding in terms of the HBM, one might expect cancer to be an impetus for changing health habits, since the diagnosis may evoke feelings of susceptibility and trigger certain behaviors such as BSE, to detect future disease. Additionally, women in the breast cancer group were significantly different from their matched cohorts in perceived benefits and barriers to exercise prior to statistical analysis evidenced by the Cochran C results. Although the degree of chronic illness disability is unknown, the lack of exercise behaviors may have been influenced by not knowing how to exercise within the limitations of a chronic illness. One of several implications for nursing practice from this study is the fact that nurses were not seen as primary sources for health information. Nurses need to be more visible and vocal as health educators. They also need to be perceived as practitioners of BSE.

In summary, the literature generally identifies the two variables of perceived susceptibility and barriers as the primary elements in the Health Belief Model affecting the practice of BSE. There is debate over the relationship of variables in the HBM and how they relate to the performance of a health behavior. This deficit, however, has generally been attributed to the lack of an appropriate tool for measurement of the variables.

The greatest variance in BSE behavior is attributed to the barriers variable. This has been the easiest to evaluate and may change in importance as tools for evaluating the other variables are developed. Limitations cited in

the studies include neglecting the habitual aspects of some behaviors, inability to measure intent of women to practice BSE, and lack of consistency in educational programs related to breast cancer.

### Research Question

The research question for this study is: What factors of the health belief model are related to the practice of breast self-examination among registered nurses?

It is hypothesized that the variables of susceptibility, seriousness, benefits, barriers, health motivation, and control will be related to the frequency of BSE.

### Definition of Terms

Conceptual definitions for the variables are as follows:

1. Susceptibility: perceived likelihood of being diagnosed with breast cancer
2. Seriousness: perceived personal harm related to breast cancer
3. Benefits: perceived positive health status resulting from performing breast self-exam.
4. Barriers: perceived obstacles which prevent performance of breast self-exam.
5. Health motivation: personal concern for maintaining a healthy self
6. Control: perceived control over breast cancer
7. Knowledge: cognitive information about breast cancer, breast cancer treatments, and procedural knowledge of BSE.

8. Practice of breast self-examination: self care practice involving manual and visual examination of the breast tissue performed by women monthly in a standing or sitting position and also in a lying down position.
9. Frequency of breast self-examination: how regular or often individuals perform the activity of breast self-examination in a time period (monthly, yearly).

## CHAPTER THREE

### METHODOLOGY AND STUDY DESIGN

#### Research Design

A descriptive, correlational design was used to examine factors which were related to the practice of breast self-examination among nurses. There was no control over the independent variables and there was no experimental manipulation or random assignment.

Environmental effects posed a threat to internal validity. This was due to the fact that respondents may have answered the questions in a different manner depending on the time of day they completed the questionnaire, how many distractions they had, and other personal factors which may have affected their general recall at that particular point in time. Their answers may also have been affected by a recent personal health care issue and/or situation which occurred in their environment.

Threats to external validity included the Hawthorne effect and measurement effect. The Hawthorne effect was a threat because respondents may have completed the questionnaire with comments they might have made simply because they were part of a research study and a nurse who should know appropriate health behavior. These respondents may not have answered questions honestly. Measurement effect was a threat because of the fact that the results may not apply to another population of nurses in a different county at a different point in time. The sampling results could also have been skewed by the fact that results were based only on individuals responding to the

questionnaire.

### Sample and Setting

The population for this research was nurses registered to practice in one county within Michigan. This list of registered nurses was those currently licensed with the State Board of Nursing in Lansing, Michigan.

Criteria that was used to select subjects for this research project were:

- 1) registered nurse licensed to practice as a nurse in the state of Michigan
- 2) female
- 3) local address in the designated county.

The sampling frame was a list of registered nurses living in a select county in Michigan. A systematic random sampling method was used. The number desired in the sampling group was 200 nurses. A survey form was mailed to the 200 nurses, but the actual sample consisted of those 107 nurses who returned the form in the envelope provided. Although the sample was randomly selected, the subjects who participated did so through self selection.

### Instrument

The instrument used for this research project was the Health Belief Model Scale: 1987 (Appendix C). This scale was developed by Victoria Lee Champion (1987) and has been used in several research projects relating variables in the HBM to BSE. The instrument was composed of sub-scales to measure susceptibility, seriousness, benefits, barriers, health motivation, and control. Susceptibility had five questions, seriousness had eight, benefits had four, barriers had seven, health motivation had seven, and control had three. All items measuring these attitudes were placed on a seven point scale.



Attitudinal items were scored with strongly agree to strongly disagree on this seven point scale.

Content validity of this tool was established by submitting all items to a panel of judges well versed in the HBM. Construct validity was established by analyzing all items with principal component factor analyses and varimax rotation. Factor analysis established independent factors that matched each of the scales as specified in the HBM. Internal consistency reliabilities using Cronbach alpha ranged from .63 to .76. Test-retest reliability coefficients utilizing Pearson r ranged from .47 to .86 with a period of one month in between testing (Champion, 1987, p. 377). While a test-retest reliability of .47 can be considered low, it is attributed to the inappropriately long period of time between administrations of the tool.

The practice of BSE was measured on a rating scale utilizing six hierarchical steps that differentiated subjects from those examining their breasts least frequently to those examining most frequently. Psychologically, these six steps represented successive increments of cancer detection behavior which approximate hierarchical efforts in detection, thus allowing the use of this measurement in multiple regression.

Additionally, demographic data was obtained in relation to age, race, sex, religion, years of nursing practice, and educational level (Appendix B).

## Procedure

The proposal was submitted to the Human Subjects Review Board for approval under the category of exempted review. Following approval (Appendix E), a list of registered nurses in Muskegon County was obtained from the Michigan State Board of Nursing. After reviewing the names, all obvious male names were eliminated. Then systematic random sampling was performed on this sample population. The sampling was accomplished by starting at a random point and then selecting every sixth name on the list of 1253 nurses registered in Muskegon County. The questionnaire and an explanatory cover letter (Appendix A) was sent to each individual asked to participate in the research project. This was followed up with a postcard to all subject within two weeks after the mailing the questionnaire. This postcard encouraged the nurses to return the survey to the researcher or to thank them for their cooperation by sending the survey in for processing (Appendix D).

Internal consistency reliabilities using Cronbach alpha ranged from .73 to .96. The variable of susceptibility had a standardized alpha of .96 and health motivation had a standardized alpha of .82. The original research by Champion (1987) reported Cronbach alpha ranges from .63 to .76.

Confidentiality was the only risk to subjects and the researcher addressed that issue in the cover letter and identified what measures would be taken to maintain confidentiality (i.e. no numbering or marking of the questionnaires to identify those returned).

## CHAPTER FOUR

### RESULTS

#### Sample Characteristics

Demographic data were analyzed using descriptive and inferential statistics. The final sample consisted of 107 subjects. The ages of the respondents ranged from 20 years old to over 60 years old with the mode being over 60 (n=25) and a median age in the 41-50 year age group (see Table 1). Of the 107 respondents, 98% were white, 1% were black, and 1% were white/hispanic. Their religion was identified as 63% Protestant, 28% Catholic, and 8% other religions. The initial preparation in nursing for these respondents was 65% diploma, 21% Associate Degree, and 14% BSN. The highest level of nursing education was 52% diploma, 18% Associate Degree, 16% BSN, 7% BA, 4% MSN, 2% MS, and 1% PhD. The most common areas of nursing practice were 16% in Medical/Surgical, 8% in Critical Care and Emergency Room, 8% in Community Health, 7% in Surgery, 4% Obstetrics, 4% Pediatrics, 2% Women's Health, and 3% Ambulatory Care. These nurses identified 16% of their nursing practice in fields other than those designated and 31% of the nurses were inactive. Years of experience in nursing ranged from less than one year which was identified by 2% of the respondents to more than 31 years which was identified by 16%. There was one missing response in this category. For specific demographic characteristics related to the BSE respondents see Table 1.

Table 1

**Demographic Information of the BSE Questionnaire Respondents**

<b><u>Variable</u></b>	<b><u>Number of Nurses</u></b>	<b><u>Percent</u></b>
<b>A-Age</b>		
20-25 years	1	<1
26-30 years	8	7.4
31-35 years	13	12.1
36-40 years	22	20.5
41-50 years	19	17.7
51-60 years	19	17.7
Over 60 years	25	23.3
<b>B-Initial Preparation in Nursing</b>		
Diploma	70	65.4
Associates Degree	22	20.6
BSN	15	14.0
<b>C-Highest Level of Education</b>		
Diploma	55	51.4
Associates Degree	20	18.7
BSN	17	15.9
MSN	4	3.7
MS	2	1.9
PhD	1	.9
<b>D-Years of Experience in Nursing</b>		
Less than 1 year	2	1.9
1-4 years	10	9.3
5-10 years	20	18.7
11-15 years	15	14.0
16-20 years	25	23.4
21-25 years	8	7.5
26-30 years	9	8.4
Over 31 years	17	15.9

Additionally, the number of individuals responding who had a friend or family member with cancer was 56%. The respondent's mean family gross annual income for the last year was in the \$50,000.00 to \$60,000.00 category.

Specific characteristics related to breast self-exam (BSE) education obtained by the respondents is described. It should be noted that nurses were asked to indicate all sources of education, thus allowing an individual more than one response. The majority (70%) of the sample received BSE education via nurses and pamphlets. Physicians and video/films were educational resources for less than half of the sample (42%) (see Table 2).

Table 2

**Identification of the Source of Knowledge of BSE**

<b><u>Source of Knowledge</u></b>	<b><u>Number of Nurses</u></b>	<b><u>Percent</u></b>
Nurse	75	70.1
Pamphlet	75	70.1
Film/Video	45	42.1
Doctor	45	42.1
Book	21	19.6
Television	15	14.0
Radio	3	2.8
Other	1	.9

---

Note: Respondents were asked to check all that apply as a source of knowledge of BSE for them.

## Data Analysis

The data prepared for this analysis was coded from a codebook prepared for this study. The questionnaires were coded as they were received by the investigator to insure confidentiality. The Health Belief Model questionnaire used for this research project was developed and modified by Champion. The instrument used in this study included five items related to susceptibility, eight items related to seriousness, four items related to benefits, seven items related to barriers, seven items related to health motivation, and three items to measure control. All items measuring these attitudes were placed on a seven-point scale ranging from strongly agree (7) to strongly disagree (1). All data were analyzed using the Statistical Package for Social Sciences (SPSS).

The data from the demographic and the Health Belief Model questionnaires for this study were analyzed using frequency distributions to identify information about the respondent's education on BSE and their performance of this health activity. The frequency of performing BSE varied from "monthly" to "do not perform exam". Of the responses, 48% do BSE monthly, 16% perform BSE every other month, and 13% every three to four months (see Table 3).

The research question for this study asked what factors of the Health Belief Model were related to the practice of breast self-examination among nurses. To answer this, a stepwise multiple regression analysis was performed. Health motivation was the first variable to enter the regression, explaining 14% of the variance in frequency of BSE (see Table 4). The variable of barriers also

entered the equation but only explained 5% of the variance in BSE. The remaining concepts in the HBM (susceptibility, seriousness, benefits, and control) added insignificant amounts to the total variance. According to this study, health motivation and barriers were the only HBM variables to significantly predict BSE.

Table 3

**Nurses Identification of the Frequency of Performance of BSE**

<b><u>Frequency</u></b>	<b><u>Number of Nurses</u></b>	<b><u>Percent</u></b>
Monthly	51	47.7
Every other month	17	15.9
Every three to four months	14	13.1
Every five to six months	4	3.7
Greater than every six months	10	9.3
Less than once per year	9	8.4
Do not perform exam	2	1.9
-----		

Table 4

**Multiple Regression of Two Health Belief Model Variables by the Frequency of Breast Self-Examination ( N = 107 )**

Variable	Multiple R	R <sup>2</sup>	R <sup>2</sup> Change	Simple R
Health Motivation	.37	.14	.14	.37
Barriers	.44	.19	.05	-.30

Since the HBM variables accounted for only 19% of the variance in BSE, demographic and other personal variables were examined for their relationship to the frequency of BSE. These variables included age, family income, a friend or family member who had been diagnosed with cancer, and the source of education of BSE identified by each respondent. These variables did not account significantly for performance of BSE. The respondents were asked whether they had a friend or family member diagnosed with cancer. There were no significant differences found in the nurse's performance of BSE if they did or did not have a friend or family member with cancer. Additionally, there was no significant difference in performance of BSE between groups taught BSE by the nurse versus the doctor.

The susceptibility of respondents who did and did not have a friend or family member with cancer was also compared. The t-test analysis indicated that there was a significant difference (  $t(105) = 4.11$ ,  $p < .001$  ) between



these two groups. As previously noted, however, there was no significant difference between these groups on the performance of the health behavior, BSE. So, if people close to the respondents had cancer, they felt they were more susceptible to getting cancer but this factor did not significantly increase their performance of BSE as a result.

Health motivation was a major predictor of BSE in this study. Therefore, an examination of the variables which affect health motivation was performed (see Figure 2). Perception of benefits showed a stronger relationship to health motivation ( $r = .31$ ,  $df = 105$ ,  $p < .001$ ) than perception of barriers ( $r = .19$ ,  $df = 105$ ,  $p < .05$ ). Differences in health motivation were examined as a function of age. The sample was divided into two groups on the basis of age (Group 1-those under 51; Group 2- those 51 and older). The health motivation scores of each group were compared using a t-test. The older group of nurses scored significantly higher on motivation ( $t(105) = 3.2$ ,  $p = .002$ ) (see Table 5).

## Correlation of Significant HBM Variables

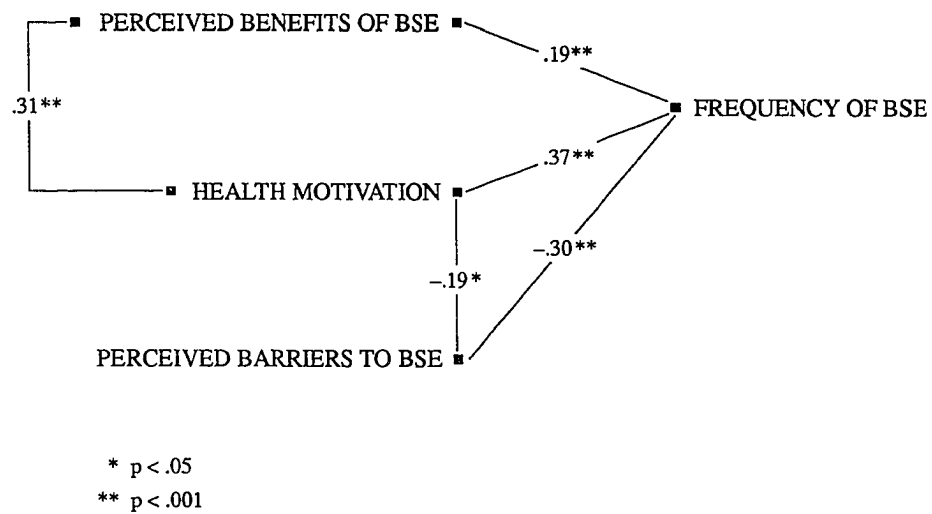


Figure 1. Correlations of significant variables in the Health Belief Model related to frequency of BSE.

Table 5

**Health Motivation as it Relates to Women 50 Years of Age and Under and Over 51 Years of Age**

	<u>n</u>	<u>Mean</u>	<u>Standard</u> <u>Deviation</u>	<u>Standard</u> <u>Error</u>
<u>GROUP 1</u>				
(Age 50 and under)	63	39.29	6.33	.80
<u>GROUP 2</u>				
(Age 51 and over)	44	43.05	5.42	.82
-----				
<b>T-test</b>				
<u>Pooled Variance Estimate</u>				
<u>F Value</u>	<u>2-tail Prob.</u>	<u>t Value</u>	<u>Degrees of Freedom</u>	<u>2-tail Prob.</u>
1.37	.282	-3.20	105	.002
-----				

A contingency table was constructed to identify the distribution of age groups in relation to active/inactive nurse categories (see Table 6). Since the older nurses generally scored higher in health motivation, it was interesting to identify whether these nurses were still active in the profession. There were 33 nurses (31%) who identified themselves as inactive and of these individuals, 31 nurses were in the 51 and older category.

Table 6

**Identification of Nurse's Age and their Active/Inactive Status in Nursing**

<u>AGE</u>	<u>INACTIVE</u>	<u>ACTIVE</u>
20-25 YEARS	0	1
26-30 YEARS	0	8
31-35 YEARS	0	13
36-40 YEARS	1	21
41-50 YEARS	1	18
51-60 YEARS	9	10
OVER 60 YEARS	<u>22</u>	<u>3</u>
TOTAL	33	74

-----

Using a Spearman rho correlation, no significant relationship was found between age and frequency of BSE. Likewise, there was no relationship between income and frequency of BSE.

**Summary**

The research question asked whether the variables of susceptibility, seriousness, benefits, barriers, health motivation, and control would be related to the frequency of BSE. There were only 48% of the nurse respondents who indicated they performed BSE monthly as recommended. Demographic and background variables were compared with frequency of BSE and revealed that

neither age nor income appeared to significantly affect the performance of BSE in the group of individuals responding to this research questionnaire. A stepwise multiple regression indicated that health motivation and barriers contribute significantly to the performance of BSE (see Table 4). Barriers had been identified in previous research as being a consistent factor in performing a health activity. Health motivation has not previously been identified as significant and could be attributed to the health profession of these respondents. An interesting outcome of this research indicated that older nurses (51 and older) were more motivated to perform BSE ( $t(105) = 3.2, p = .002$ ) than younger nurses. Additionally, the nurses who had friends or family members with cancer indicated they felt they were more susceptible to getting cancer but this fact did not increase their performance of BSE.

The findings from this study support previous research on the Health Belief Model but indicate that all the variables in the model do not significantly affect individual participation in BSE. The hypothesis that the variables of the Health Belief Model, susceptibility, seriousness, barriers, benefits, health motivation, and control affect the frequency of BSE in a selected group of nurses was not totally supported.

## CHAPTER FIVE

### DISCUSSION

The research question for this study was: What factors of the health belief model are related to the practice of breast self examination among registered nurses? The current research was a continuation of efforts to identify variables related to the behavior of breast self-examination and built upon efforts to examine the health belief model as an explanation of breast self-examination behavior (Champion, 1987). The six variables of the HBM used for this study were perceived susceptibility to breast cancer, perceived seriousness of breast cancer, perceived benefits of BSE, perceived barriers to BSE, health motivation, and control. The health activity of BSE was measured on a routine basis. The HBM variables of health motivation and perceived barriers were significantly related to the frequency of breast self-examination but explained only 19% of the variance in frequency of BSE. The results support the findings of the previous research, however.

The Health Belief Model adapted for use in this study suggested that modifying factors for a particular nurse affect the Health Belief Model variables, and these in turn affected the individual frequency of BSE. Two modifying factors were related to HBM variables. Older nurses scored higher on health motivation which in turn was the major variable in the regression equation. Having a friend or family member with cancer increased the perceived susceptibility to cancer, but susceptibility was not sufficiently significant to be included in the regression equation.

The results of this and other studies support the premise that some of the

HBM variables contributed to an individual's performance of BSE. This current research identified the variables of health motivation and barriers as most significantly affecting BSE in this population of nurses. Knowledge as a variable was not included in this research since the focus originally was identified as frequency of BSE. Champion's previous research (Champion, 1987) identified barriers and knowledge as explaining the most significant amount of variance, with health motivation significantly correlated but contributing insignificantly to the variance. Since the knowledge variable was not measured, it may have affected the result as compared to Champion's and positioned health motivation more significantly in the equation.

Multiple regression was performed on the HBM variables for this research. Health motivation and barriers accounted for 19% of the variance for performance of BSE. Health motivation accounted for 14% and barriers accounted for 5% of this variance. These results are in contrast to Champion's (1987) which indicated that health motivation accounted for less than 1% of the variance and the barriers variable accounted for 22% of the unique variance for performance of BSE in a stepwise multiple regression. Champion also indicated that the knowledge variable contributed to 3% of the variance. The remaining HBM variables that were measured in this research, contributed little to the total variance in BSE.

The barriers variable has been consistently related to the frequency of BSE (Champion, 1984, 1985, 1987, Trotta, 1980). Therefore, nurses need to identify the barriers preventing them and other women from completing BSE. Items related to barriers such as embarrassment, time involved, fear, lack of

mobility related to the aging process, and difficulty remembering, have been identified in previous studies as contributing to lack of performing BSE.

Health motivation was significantly related to the frequency of BSE utilizing multiple regression. Health motivation was the highest predictor and accounted for the highest portion of variance. In addition, for this research, health motivation was significantly related to benefits and barriers. Perhaps perception of benefits and barriers can impact nurses awareness of BSE and encourage improved performance of the activity.

### Limitations

There are several areas which present possible limitations to this study. Over 98% of the respondents to this study were white. The population was a group of registered nurses from one county. Although the minority population in that county is significantly higher (> 40%), there is less than 8% of the nursing population identified as minority. The sample size was 107 out of a possible 200. Although a return of slightly more than 50% (107 out of 200) is good for a survey, a slightly larger sample may have been needed to adequately test all the HBM variables. This sample size could present limitations for the study.

There were some questions on the questionnaire which were either not clear or raised concerns for some of the respondents. These questions included issues of BSE and its effect on a heterosexual relationship without consideration for variances in personal relationships such as a single or homosexual relationship. There was another issue on the question of untreated breast cancer affecting one's life. The response was that logically there would be no life. Also, a few nurses commented that they found the entire



questionnaire confusing but admitted they did not utilize the health care system at all and had no intention of changing their behavior. Another comment was on the question of "feelings about myself would change if I had breast cancer". The respondent wrote that even prompt treatment of breast cancer could lead to major surgery and self-image issues which would need to be addressed. Finally, the length of the questionnaire (45 items) may also have contributed to their lack of response.

Previous limitations cited in the study by Champion also apply to this study. A multiple-item scale needs to be developed to measure breast self-examination. Particularly, the issue of thoroughness as well as frequency of BSE needs to be addressed.

#### Nursing Implications

This study has offered some insights into nurses performance of a health behavior. Performance of BSE continues to be a problem for many nurses. An increasing health problem, breast cancer, is frequently discussed. The prevention aspect is continuously identified with breast self-examination and mammography as two primary detection methods for breast cancer. Breast self-examination is identified as an inexpensive, easy, self-administered activity that can detect lumps in the breast at an early stage of development. Nurses, as previously discussed, are primary care providers who can educate the public on health issues. They can also encourage each other to follow healthy activities and should be actively involved in methods to accomplish this.

The changing medical and political climates have recently placed health and various health activities in the limelight. Good diet, moderate activity, and

regular medical visits are encouraged in an effort to promote wellness in society. As part of this healthy regime, breast self-examination, along with other health activities, are discussed and encouraged. The increasing incidence in diagnosis of breast cancers has also led to a media blitz by the Public Health Department. All of these factors contribute to an increasing public awareness and encourage participation in preventive health activities to maintain a well state. Nurses, as a predominantly female profession, have an obligation to educate and encourage their colleagues in BSE and then promote those same programs in the public sector.

The results of this study indicate that the older nurses (over 51 years) have a higher motivation to perform health activities and have a higher frequency of performance of BSE. These nurses may have a higher motivation because they are at a higher risk for being diagnosed with breast cancer. These nurses are also less likely to be engaged in active practice. Regardless of the reason, these older nurses have the potential to impact the health of their fellow nurses by education, encouragement, and any other means appropriate. They are more motivated to perform BSE and should design methods to assist other nurses in identifying and performing these same health activities. Perhaps the district nurses association could actively engage these nurses as volunteers in doing BSE teaching to the community and their peers.

The HBM variable of barriers is a constant in all of the research. Barriers to performing BSE have been identified and should be a focal point in educating nurses as a group and extending the concepts to the general population. Easy methods to remember to perform this activity, peer support for

doing BSE, and other methods to heighten awareness and decrease barriers should be pursued.

#### Recommendations for Further Research

Additional research needs to be conducted on the variables of the Health Belief Model as they relate to performance of BSE. A further definition of barriers and how to minimize them for all populations is necessary. Also, analysis of the various age groups and the impact of perceived susceptibility would be appropriate. If the older nurses have a significantly higher identification with health motivation, what does susceptibility mean to them?

This study focused on a limited ethnic population. It would be advantageous to replicate this study in a more diverse population. Additionally, it would be appropriate to test the concepts related to health motivation and barriers in this same population or other culturally diverse groups.

The health care climate is in a constant state of change. Diseases become more predominant or fade into oblivion. Breast cancer is a disease that has pervaded the health care scene for several years and is increasing its impact during the 1990's. Women, health issues, diet, exercise, and prevention are all commonly used words in a modern society. Breast cancer, metastasis, chemotherapy, radiation, lumpectomy, and death are equally prevalent terms. Breast self-examination is a preventive health method that can detect cancer early in a woman's life. Nurses do not utilize this health activity as recommended, and they may not encourage other women to do so either. In an effort to improve outcome, strategies to enhance the early detection of breast cancer should be the focal point for researchers and health educators in our

society. Breast self-examination should be utilized and encouraged by all female nurses to detect this dreaded disease.

## APPENDIX A

### Cover Letter

May 14, 1994

Anne M. Bauer  
1143 Scenic Dr.  
N. Muskegon, MI 49445

Dear RN,

I need your help. There has been significant controversy in the media about the effectiveness and necessity of routine mammograms versus breast self-examination. As a health provider, your opinions and practices with respect to this issue would be useful in developing guidelines for client education and health promotion activities.

Your name has been selected from a random sample of nurses in Muskegon County. I have enclosed with this letter a survey with questions about breast self-examination and an important data sheet. Please take ten or so minutes to fill them out. For mailing, there is a self-addressed stamped envelope. There is also an enclosed postcard for you to complete and return if you would like a copy of the results of this study sent to your place of employment. The postcard should be mailed separately; this will protect the anonymity of the questionnaire response. The results of this study will be in summary form only.

Thanks so much for your help in this matter. You can contact me at any time if you have questions about this research. My home phone number is (616) 7444527.

Sincerely,

A black rectangular box redacting the signature of Anne M. Bauer.

Anne M. Bauer, RN, BSN

## APPENDIX B

### Demographic Questionnaire

BACKGROUND INFORMATION  
BREAST-SELF EXAMINATION STUDY

ID. NO. (1-3)

Do Not Write  
In This Space

- A. YOUR AGE: 1. \_\_\_\_ 20-25    2. \_\_\_\_ 26-30    3. \_\_\_\_ 31-35  
4. \_\_\_\_ 36-40    5. \_\_\_\_ 41-50    6. \_\_\_\_ 51-60  
7. \_\_\_\_ OVER 60

\_\_\_\_ (5)

- B. YOUR RACE: 1. \_\_\_\_ Black    2. \_\_\_\_ White  
3. \_\_\_\_ White/Hispanic    4. \_\_\_\_ Asian  
5. \_\_\_\_ Other

\_\_\_\_ (6)

- C. YOUR RELIGION: 1. \_\_\_\_ Protestant    2. \_\_\_\_ Catholicism  
3. \_\_\_\_ Judaism    4. \_\_\_\_ Other

\_\_\_\_ (7)

D. WHAT WAS YOUR INITIAL PREPARATION IN NURSING?

1. \_\_\_\_ Diploma in Nursing  
2. \_\_\_\_ Associates Degree in Nursing  
3. \_\_\_\_ Baccalaureate Degree in Nursing

\_\_\_\_ (8)

E. WHAT IS YOUR HIGHEST LEVEL OF EDUCATION?

1. \_\_\_\_ Diploma in Nursing  
2. \_\_\_\_ Associates Degree in Nursing  
3. \_\_\_\_ Baccalaureate Degree in Nursing  
4. \_\_\_\_ Baccalaureate Degree in another field  
(Please specify \_\_\_\_\_)  
5. \_\_\_\_ Masters Degree in Nursing  
6. \_\_\_\_ Masters Degree in another field  
(Please specify \_\_\_\_\_)  
7. \_\_\_\_ Doctorate (Please specify \_\_\_\_\_)

\_\_\_\_ (9)

F. IN WHAT AREA OF NURSING DO YOU PRACTICE?

1. \_\_\_\_ Med/Surg    6. \_\_\_\_ Community Health Nursing  
2. \_\_\_\_ Obstetrics    7. \_\_\_\_ Ambulatory Care  
3. \_\_\_\_ Pediatrics    8. \_\_\_\_ Critical Care/ED  
4. \_\_\_\_ Women's Health    9. \_\_\_\_ Other (Please specify)  
5. \_\_\_\_ Surgery    10. \_\_\_\_ Inactive at present

\_\_\_\_ (10-11)

(OVER)



G. HOW MANY YEARS OF EXPERIENCE DO YOU HAVE IN NURSING (INCLUDING EXPERIENCE AS AN EDUCATOR OR NURSING ADMINISTRATOR)?

- |   |  |      |
|---|--|------|
| 1. <input type="checkbox"/> Less than 1 | 5. <input type="checkbox"/> 16-20 years        |      |
| 2. <input type="checkbox"/> 1-4 years   | 6. <input type="checkbox"/> 21-25 years        |      |
| 3. <input type="checkbox"/> 5-10 years  | 7. <input type="checkbox"/> 26-30 years        |      |
| 4. <input type="checkbox"/> 11-15 years | 8. <input type="checkbox"/> More than 31 years | (12) |

H. DO YOU HAVE A FRIEND OR FAMILY MEMBER WITH BREAST CANCER?

- |                                 |      |
|---------------------------------|------|
| 1. <input type="checkbox"/> Yes | (13) |
| 2. <input type="checkbox"/> No  |      |

I. WHAT IS THE METHOD BY WHICH YOU WERE TAUGHT BREAST SELF-EXAM (BSE)? CHECK ALL THAT APPLY.

- |  |  |         |
|--|--|---------|
| 1. <input type="checkbox"/> Nurse explanation/demonstration  | 5. <input type="checkbox"/> Radio                  | (14)    |
| 2. <input type="checkbox"/> Doctor explanation/demonstration | 6. <input type="checkbox"/> Film/Videotape         | (15)    |
| 3. <input type="checkbox"/> Pamphlet                         | 7. <input type="checkbox"/> Television             | (16)    |
| 4. <input type="checkbox"/> Book                             | 8. <input type="checkbox"/> Other (Please specify) | (17)    |
|  |  | (18)    |
|  |  | (19)    |
|  |  | (20)    |
|  |  | (21)    |
|  |  | (22-23) |

J. WHAT IS YOUR FREQUENCY OF PERFORMING BREAST SELF-EXAM (BSE)?

- |   |      |
|---|------|
| 1. <input type="checkbox"/> More than once a month          |      |
| 2. <input type="checkbox"/> Monthly                         |      |
| 3. <input type="checkbox"/> Every other month               |      |
| 4. <input type="checkbox"/> Every 3-4 months                |      |
| 5. <input type="checkbox"/> Every 5-6 months                |      |
| 6. <input type="checkbox"/> Less than every 6 months        |      |
| 7. <input type="checkbox"/> Do not perform this examination | (24) |

K. IN WHAT RANGE WAS YOUR FAMILY'S GROSS ANNUAL INCOME LAST YEAR?

- |  |      |
|--|------|
| 1. <input type="checkbox"/> Under \$10,000       |      |
| 2. <input type="checkbox"/> \$10,000 to \$19,999 |      |
| 3. <input type="checkbox"/> \$20,000 to \$29,999 |      |
| 4. <input type="checkbox"/> \$30,000 to \$39,999 |      |
| 5. <input type="checkbox"/> \$40,000 to \$49,999 |      |
| 6. <input type="checkbox"/> \$50,000 to \$59,999 |      |
| 7. <input type="checkbox"/> Over \$60,000        | (25) |

THANK YOU!!!!!!

## APPENDIX C

### Breast Self-Examination Questionnaire



- 7- *strongly agree*  
 6- *moderately agree*  
 5- *slightly agree*  
 4- *neutral*  
 3- *slightly disagree*  
 2- *moderately disagree*  
 1- *strongly disagree*

The next group of questions concerns what you believe about the seriousness of breast cancer. In answering the following questions, you should assume that no breast self-examination behavior occurs and the discovering of breast cancer occurs by chance.

- |   |   |   |   |   |   |   |   |      |
|---|---|---|---|---|---|---|---|------|
| 6. The thought of breast cancer, if not treated promptly, scares me.....  | 7 | 6 | 5 | 4 | 3 | 2 | 1 | (32) |
| 7. Feelings about myself would change if I got breast cancer and it were not treated promptly.....                  | 7 | 6 | 5 | 4 | 3 | 2 | 1 | (33) |
| 8. When I think about breast cancer which is not treated promptly my heart beats faster.....                        | 7 | 6 | 5 | 4 | 3 | 2 | 1 | (34) |
| 9. I am afraid to even think about breast cancer if it is not treated promptly.....                                 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | (35) |
| 10. Problems I would experience from breast cancer, which was not treated promptly, would last a long time.....     | 7 | 6 | 5 | 4 | 3 | 2 | 1 | (36) |
| 11. Breast cancer, which was not treated promptly, would endanger my relationship with my boyfriend or husband..... | 7 | 6 | 5 | 4 | 3 | 2 | 1 | (37) |
| 12. If I had breast cancer which was not treated promptly, my whole life would change.....                          | 7 | 6 | 5 | 4 | 3 | 2 | 1 | (38) |
| 13. If I developed breast cancer and it was treated promptly, I would not live longer than 5 years.....             | 7 | 6 | 5 | 4 | 3 | 2 | 1 | (39) |

- 7- *strongly agree*  
 6- *moderately agree*  
 5- *slightly agree*  
 4- *neutral*  
 3- *slightly disagree*  
 2- *moderately disagree*  
 1- *strongly disagree*

The next group of questions concerns what you believe are the benefits of performing BSE. In answering these questions you are to assume that you perform BSE monthly during the next year.

14. Performing BSE on a monthly basis during the next year will allow me to detect breast lumps early..... 7 6 5 4 3 2 1 \_\_\_\_\_(40)
15. Performing BSE on a monthly basis during the next year will reduce my chance of dying of breast cancer..... 7 6 5 4 3 2 1 \_\_\_\_\_(41)
16. Performing BSE will reduce my chance of requiring radical or disfiguring surgery for breast cancer..... 7 6 5 4 3 2 1 \_\_\_\_\_(42)
17. Performing monthly BSE will help me find a lump before it is discovered by a nurse or a doctor..... 7 6 5 4 3 2 1 \_\_\_\_\_(43)

The next group of questions concern what you believe are consequences resulting from performing BSE. In answering these questions you should assume that you will perform BSE on a monthly basis during the next year.

18. Performing BSE on a monthly basis during the next year will make me worry about breast cancer..... 7 6 5 4 3 2 1 \_\_\_\_\_(44)
19. Performing BSE will be embarrassing to me..... 7 6 5 4 3 2 1 \_\_\_\_\_(45)
20. Performing BSE will take too much time..... 7 6 5 4 3 2 1 \_\_\_\_\_(46)

(OVER)

7-*strongly agree*  
 6-*moderately agree*  
 5- *slightly agree*  
 4- *neutral*  
 3- *slightly disagree*  
 2- *moderately disagree*  
 1- *strongly disagree*

- |  |   |   |   |   |   |   |   |            |
|--|---|---|---|---|---|---|---|------------|
| 21. Performing BSE will not be pleasant.....   | 7 | 6 | 5 | 4 | 3 | 2 | 1 | _____ (47) |
| 22. I cannot find a lump in my breast<br>with BSE.....   | 7 | 6 | 5 | 4 | 3 | 2 | 1 | _____ (48) |
| 23. Performing BSE will be hard to<br>remember.....  | 7 | 6 | 5 | 4 | 3 | 2 | 1 | _____ (49) |
| 24. It is difficult for me to do BSE.....  | 7 | 6 | 5 | 4 | 3 | 2 | 1 | _____ (50) |
| <p>The following questions ask about your health behavior and about how well you feel you can control breast cancer.</p> |   |   |   |   |   |   |   |            |
| 25. Maintaining good health is extremely<br>important to me.....   | 7 | 6 | 5 | 4 | 3 | 2 | 1 | _____ (51) |
| 26. I search for new information related<br>to my health.....  | 7 | 6 | 5 | 4 | 3 | 2 | 1 | _____ (52) |
| 27. I frequently do things to improve<br>my health.....  | 7 | 6 | 5 | 4 | 3 | 2 | 1 | _____ (53) |
| 28. I eat a well-balanced diet.....  | 7 | 6 | 5 | 4 | 3 | 2 | 1 | _____ (54) |
| 29. I exercise at least three times a week...  | 7 | 6 | 5 | 4 | 3 | 2 | 1 | _____ (55) |
| 30. I will do BSE in the future.....   | 7 | 6 | 5 | 4 | 3 | 2 | 1 | _____ (56) |
| 31. I work hard to discover breast<br>cancer early.....  | 7 | 6 | 5 | 4 | 3 | 2 | 1 | _____ (57) |
| 32. I can control the effect of breast cancer<br>by discovering lumps at an early stage<br>through monthly BSE.....      | 7 | 6 | 5 | 4 | 3 | 2 | 1 | _____ (58) |

- 7-strongly agree**  
**6- moderately agree**  
**5- slightly agree**  
**4- neutral**  
**3- slightly disagree**  
**2- moderately disagree**  
**1- strongly disagree**

33. The effects of breast cancer can be  
 controlled through my efforts of early  
 detection by BSE..... 7 6 5 4 3 2 1 (59)
34. I can control the effects of breast cancer  
 by getting help from professionals..... 7 6 5 4 3 2 1 (60)

## APPENDIX D

### Postcards



May 1994

Dear Nurse,

Last week a questionnaire related to breast self-examination (BSE) was mailed to you. If you have already completed and returned the questionnaire to me, many thanks. If not, please do so today! Your response is very important for this study.

If by some chance you did not receive the questionnaire, or it was misplaced, please call me collect (616-744-4527) now. I will be happy to mail you another one.

Sincerely,

Ann Bauer

Please send the results of the study, Nurses Adherence to Breast Self-Examination, to my place of employment.

Name \_\_\_\_\_

Address \_\_\_\_\_

City, State, Zip \_\_\_\_\_

Attention: \_\_\_\_\_

Thanks

## APPENDIX E

Permission from the Human Research Committee  
of Grand Valley State University



1 CAMPUS DRIVE • ALLENDALE MICHIGAN 49401-9403 • 616/895-6611

April 18, 1994

Anne Bauer  
1143 Scenic Dr.  
N. Muskegon, MI 49445

Dear Anne:

Your proposed project entitled "*Nurses Adherence to Breast Self-Examination*" has been reviewed. It has been approved as a study which is exempt from the regulations by section 46.101 of the Federal Register 46(16):8336, January 26, 1981.

Sincerely,

A black rectangular box redacting the signature of Paul Huizenga.

Paul Huizenga, Chair  
Human Research Review Committee

## APPENDIX F

### Permission to use the Breast Self-Examination Questionnaire



INDIANA UNIVERSITY

SCHOOL OF NURSING

CENTER FOR NURSING RESEARCH  
Indiana University School of Nursing  
1111 Middle Drive-Room 338  
Indianapolis, Indiana 46202-5107  
(317) 274-7627

April 7, 1993

Anne M. Bauer, RN, BSN  
1143 Scenic Dr.  
N. Muskegon, MI 49445

Dear Ms. Bauer:

You have my permission to use the 1987 article which is enclosed with validity and reliability results. My only request is that you cite my work and send me a copy of completed results. If I can be of further help, please do not hesitate to let me know.

Sincerely,

A black rectangular box redacting the signature of Victoria L. Champion.

Victoria L. Champion, RN, DNS, FAAN  
Professor and Associate Dean  
for Research

VLC:jj

## LIST OF REFERENCES

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